

STEPTOE & JOHNSON LLP

ATTORNEYS AT LAW

1330 CONNECTICUT AVENUE, N.W.
WASHINGTON, D.C. 20036-1795

PHOENIX, ARIZONA
TWO RENAISSANCE SQUARE

TELEPHONE: (602) 257-5200
FACSIMILE: (602) 257-5299

ALFRED M. MAMLET
(202) 429-6205

(202) 429-3000
FACSIMILE: (202) 429-3902
TELEX: 99-2503

STEPTOE & JOHNSON INTERNATIONAL
AFFILIATE IN MOSCOW, RUSSIA

TELEPHONE: (011-7-501) 258-5250
FACSIMILE: (011-7-501) 258-5251

DOCKET FILE COPY ORIGINAL

July 15, 1996

VIA HAND DELIVERY

Mr. William F. Caton, Acting Secretary
Federal Communications Commission
Room #222
1919 M Street, N.W.
Washington, DC 20554

**Re: In the Matter of Amendment of the Commission's Regulatory
Policies to Allow Non-U.S.-Licensed Space Stations to Provide
Domestic and International Satellite Service in the United
States
IB Docket No. 96-111**

Dear Mr. Caton:

Enclosed please find for filing on behalf of Motorola Satellite
Communications, Inc. and Iridium, Inc. an original and five copies of the Comments of
Motorola Satellite Communications, Inc. and Iridium, Inc.

Also, enclosed please find one copy of this filing to be date stamped and
returned with our messenger.

If there are any questions concerning this filing, please do not hesitate to
contact us.

Respectfully submitted,



Alfred M. Mamlet
Maury D. Shenk
Counsel for Motorola Satellite
Communications, Inc. and Iridium, Inc.

Enclosures

No. of Copies rec'd 0+5
List A B C D E

DOCKET FILE COPY ORIGINAL

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

JUL 15 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

IB Docket No. 96-111

In the Matter of:

**Amendment of the Commission's
Regulatory Policies to Allow
Non-U.S.-Licensed Space Stations to
Provide Domestic and International
Satellite Service in the United States**

**COMMENTS OF
MOTOROLA SATELLITE COMMUNICATIONS, INC.
AND IRIDIUM, INC.**

Michael D. Kennedy
Vice President and Director
Regulatory Relations
Barry Lamberman, Manager
Satellite Regulatory Affairs
MOTOROLA, INC.
Suite 400
1350 I Street, N.W.
Washington, DC 20005
(202) 371-6900

Philip L. Malet
Alfred M. Mamlet
Maury D. Shenk
STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, DC 20036
(202) 429-3000

Their Attorneys

F. Thomas Tuttle, Vice President
and General Counsel
Patricia A. Mahoney, Senior Counsel
Regulatory Matters
IRIDIUM, INC.
Eighth Floor
1401 H Street, N.W.
Washington, DC 20005
(202) 326-5600

Dated: July 15, 1996

SUMMARY

Motorola Satellite Communications, Inc. ("Motorola") and Iridium, Inc. ("Iridium") strongly support non-discriminatory access to all national markets for all qualified mobile satellite services ("MSS") and global mobile personal communications services ("GMPCS") providers. Non-discriminatory access to all national markets will benefit consumers throughout the world by providing them with lower prices and a wide range of service offerings. The best way to obtain this necessary worldwide non-discriminatory market access is through a broad multilateral agreement to permit open access to national markets for all qualified MSS providers.

For these reasons, Motorola and Iridium strongly support a successful conclusion of the negotiations in the World Trade Organization ("WTO") Group on Basic Telecommunications ("GBT"), based upon an agreement by a "critical mass" of countries to provide nondiscriminatory market access. The initial deadline for GBT offers was April 30, 1996. However, as of that date, precious few countries had made sufficient market opening offers to permit non-discriminatory GMPCS/MSS entry by January 1, 1998. Only the United States, most (but not all) of the European Union countries, Japan, Australia, New Zealand and Iceland had agreed to provide the necessary access. These countries do not remotely constitute a critical mass for GMPCS. The GBT has therefore properly extended the negotiating period to February 15, 1997 to allow other participants to improve their offers.

Motorola and Iridium are optimistic that there will be enough improved offers to enable the GBT to reach an agreement by February 15, 1997, which will provide important market-opening benefits in the MSS/GMPCS market (as well as in a variety of other telecommunications sectors) for those countries that choose to open their national markets to these services. If there is a successful WTO agreement, then

the essential goal of market access in a critical mass of countries will be achieved without dependence on implementation of a new U.S. entry standard for non-U.S.-licensed satellite systems. This is the goal of Motorola and Iridium.

However, to the extent the WTO negotiations do not result in a critical mass of countries agreeing to provide global non-discriminatory market access, the Commission must adopt its own pro-competitive policies to promote non-discriminatory market access. The Commission's DISCO-II NPRM is an important step in this direction. It is in this context that these comments are provided.

Motorola and Iridium submit these comments primarily to address the issues relating to entry of non-U.S.-licensed satellite systems into the U.S. market for MSS, including GMPCS. The MSS/GMPCS market presents special issues in this proceeding, primarily because of the uniquely global nature of GMPCS services. As the Commission recognizes in the DISCO-II NPRM, the structure of the MSS market necessitates a modified, global version of the basic effective competitive opportunities test for satellite services (the "ECO-Sat" test) to ensure that a critical mass of countries provide nondiscriminatory market access.

The MSS market is experiencing a period of rapid development and change. Today, the only provider of global MSS is the International Maritime Satellite Organization ("Inmarsat"). In the next few years, however, a variety of new MSS systems, including as many as four global "Big LEO" systems -- Iridium, Odyssey, Globalstar, and I-CO Global ("I-CO") -- are expected to enter the market and to provide GMPCS. The first Big LEO GMPCS system in operation will be the IRIDIUM® System, which will provide personal communications services from virtually anywhere in the world to virtually anywhere else in the world by the third quarter of 1998.

Iridium and the other U.S.-licensed Big LEOs, Globalstar and Odyssey, will ultimately compete on a global basis with the non-U.S.-licensed I-CO Global

system. To some extent, each of these companies has foreign investment which is necessary for a successful GMPCS system. I-CO Global is owned almost exclusively by Inmarsat and its mostly government-owned Signatories. Inmarsat has indicated "the possibility of convergence between I-CO and Inmarsat in the long term."^{1/} The Commission must consider these circumstances -- including in particular their implications with respect to market access and spectrum allocation -- in formulating a market entry standard in this proceeding.

In the DISCO-II NPRM, the Commission proposes "to deal with MSS market access issues through simultaneous evaluation of effective competitive opportunities on a global or regional basis."^{2/} Motorola and Iridium fully support this proposed "global ECO-Sat" test for MSS/GMPCS.

MSS/GMPCS systems are fundamentally different from other satellite systems because MSS and GMPCS earth stations and users are mobile. A global GMPCS system has value for a user **precisely because** it can provide services around the globe. Thus, for MSS/GMPCS, it is not possible to define competitive opportunities on a route-by-route basis.

The two principal types of Big LEO GMPCS customers -- "roamers" and "homers" -- demonstrate the global nature of MSS and GMPCS. "Roamers" are the GMPCS users who will use the services outside of their home countries. They will use GMPCS on a variety of country-to-country routes and will constitute the substantial majority of GMPCS customers. "Homers" are the GMPCS users who will use the services primarily within their home country. Motorola and Iridium expect they will be

^{1/} Interim Report of the Intersessional Working Group (IWG) to the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/11/3, at 5 (Jan. 15, 1996); see also Report of the Tenth (Extraordinary) Session of the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/10/18, at A31 (Dec. 13, 1994).

^{2/} DISCO-II NPRM at ¶ 47 (May 14, 1996).

predominantly located outside of the United States, in a wide variety of countries. While Iridium will eventually serve homers in more than 200 countries, it is the roamers that make the GMPCS service unique. Since the value of any GMPCS service to roamers will depend on the markets where that service is available, barriers to entry will severely distort competition. Accordingly, it is essential that the Commission take into account global market access opportunities for U.S.-licensed GMPCS providers in formulating an entry test for MSS in this proceeding.

Economic theory regarding (1) product and geographic market definition and (2) "network effects" also supports a global ECO-Sat test for the MSS/GMPCS market. The GMPCS product market is unique in that GMPCS is **itself** a global product. Big LEO companies will sell the ability to communicate to and from virtually anywhere in the world, and a Big LEO GMPCS system that provides services in only a few countries will have a product with only limited value to most potential consumers. The market for the services of a GMPCS system is also a paradigmatically global geographic market.

The theory of "network effects" -- i.e., that "[t]here are many products for which the utility that a user derives from consumption of the good increases with the number of other agents consuming the good"^{3/} -- also supports global analysis of the MSS/GMPCS market. In particular, commentators have opined that "goods with network [effects] are often characterized by the existence of a **critical mass point**."^{4/} Accordingly, the Commission properly proposes a global ECO-Sat test for MSS market entry test that evaluates market access in terms of "critical mass."

^{3/} Michael L. Katz & Carl Shapiro, Network Externalities, Competition, and Compatibility, 75 Am. Econ. Rev. 424, 424 (1985).

^{4/} Nicholas Economides & Charles Himmelberg, Critical Mass and Network Evolution in Telecommunications, in Toward a Competitive Telecommunications Industry 47 (Gerard Brock ed., 1995) (original emphasis).

Critical mass in the MSS/GMPCS market means that there is effective market access in a sufficient number of countries to make the benefits of access to those countries' markets for U.S. providers of MSS services outweigh the competitive risks of opening the U.S. market to non-U.S.-licensed satellite systems, even though U.S.-licensed systems do not have market access in some countries. Motorola and Iridium propose a two-part critical mass test for MSS/GMPCS market entry:

1. There is a rebuttable presumption of critical mass with respect to a non-U.S.-licensed MSS system if there are effective competitive opportunities for U.S.-licensed MSS systems in the home markets of the direct and indirect owners of the foreign system, including 80 percent of the home market countries of such direct and indirect owners, and 80 percent of the population of the home market countries of such direct and indirect owners.
2. The basic presumption regarding critical mass may be rebutted, based upon consideration of all relevant factors, including the importance of national markets in which there are not effective competitive opportunities for U.S.-licensed MSS systems.

This proposed test would advance global and domestic competition by establishing a standard for market entry that is exacting enough to encourage broad market access for U.S.-licensed MSS systems, while flexible enough to permit practical compliance by non-U.S.-licensed systems.

In summary, Motorola and Iridium believe that the best way to ensure non-discriminatory market access is through a successful WTO agreement. If there is such an agreement, then the essential global market access will be achieved without dependence on implementation of a new U.S. entry standard for non-U.S.-licensed satellites systems. However, if a critical mass of WTO members do not make the necessary market-opening commitments by February 15, 1997, then the Commission's proposal is necessary to promote competition and to encourage other countries to open their markets.

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. THE STRUCTURE OF THE MOBILE SATELLITE SERVICES MARKET	4
A. The International Maritime Satellite Organization	5
B. The Big LEO Systems	7
1. The IRIDIUM® System	8
2. Odyssey And Globalstar	9
3. I-CO Global Communications	10
C. Regional Geostationary Systems	12
III. THE WORLD TRADE ORGANIZATION IS WORKING TO PROMOTE GLOBAL MARKET ACCESS FOR SATELLITE SERVICES	13
IV. THE COMMISSION SHOULD APPLY A GLOBAL ECO-SAT MARKET ENTRY TEST TO NON-U.S.-LICENSED MSS PROVIDERS, TO TAKE INTO ACCOUNT THE GLOBAL NATURE OF THE MSS MARKET	15
A. Section 308(c) Of The Communications Act Of 1934 Authorizes The Commission's Regulation Of Market Entry By Non-U.S.-Licensed Satellite Systems	16
B. The Commission Properly Proposes To Treat The MSS Market As A Distinct Market	19
C. The Market For GMPCS Is Uniquely Global In Nature	20
1. Projected Usage Patterns Demonstrate The Global Nature Of The MSS/GMPCS Market	21
2. Economic Theory Demonstrates The Global Nature Of The MSS Market	23
a. Market Definition	23
(1) Product Market	23
(2) Geographic Market	24
b. Network Effects	25

	Page
D. The Commission Properly Proposes A Critical Mass ECO-Sat Test For Entry Into The MSS Market	27
1. The ECO-Sat Test Is An Appropriate Market Entry Test For Satellite Services	28
2. The Global Nature Of MSS Requires That The ECO-Sat Test For MSS Market Entry Include The Critical Mass Component Identified By The Commission	30
E. Motorola And Iridium Propose A Critical Mass Test That Promotes Predictability And Ensures Effective Competitive Opportunities For U.S.-Licensed MSS Systems	32
F. Certain Other Considerations Are Important To The Market Entry Test For Non-U.S.-Licensed MSS Systems	35
1. The Availability Of Spectrum Is A Critical Public Interest Factor	35
2. Licenses For Foreign-Licensed MSS Systems Must Be Conditioned On An Absence Of Special Market Access Concessions In Any Country	37
3. The Commission Should Require Non-U.S.-Licensed Satellite Systems To Comply With U.S. Legal And Technical Requirements	38
4. The Commission Should Concurrently Consider Applications From U.S. And Non-U.S. Satellite Systems In Consolidated Processing Rounds	38
5. The Commission Should Limit Its Regulation Of MSS Providers To Licensing Of Earth Stations At This Time	39
V. THE MARKET ENTRY TEST FOR INMARSAT AND ITS SUBSIDIARIES, AFFILIATES, AND SUCCESSORS SHOULD BE THE SAME AS THE GLOBAL ECO-SAT TEST FOR MSS	40
A. The Commission Properly Proposes To Treat Subsidiaries, Affiliates, And Successors Of Intergovernmental Satellite Organizations In The Same Manner As Other Satellite Systems	40
B. The Commission Should Also Apply The Global ECO-Sat Test To Pending And Future Applications For U.S. Domestic Service By Inmarsat	41
VI. CONCLUSION	45

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

RECEIVED
JUL 15 1996
FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of:

**Amendment of the Commission's
Regulatory Policies to Allow
Non-U.S.-Licensed Space Stations to
Provide Domestic and International
Satellite Service in the United States**

IB Docket No. 96-111

**COMMENTS OF
MOTOROLA SATELLITE COMMUNICATIONS, INC.
AND IRIDIUM, INC.**

I. INTRODUCTION

Motorola Satellite Communications, Inc. ("Motorola") and Iridium, Inc. ("Iridium") submit these comments pursuant to 47 C.F.R. § 1.411, et seq., and the Commission's Notice of Proposed Rulemaking in this proceeding, released on May 14, 1996. This proceeding must first be placed in the proper perspective. As explained below, nondiscriminatory market access would best be achieved through a successful World Trade Organization ("WTO") agreement by a critical mass of countries. Motorola and Iridium strongly support such an agreement. However, if there is not a critical mass of countries that commit to open their markets to mobile satellite service ("MSS") providers on a nondiscriminatory basis, then the Commission must adopt the pro-competitive policies proposed in the NPRM, with the minor modifications suggested below, to encourage other countries to open their markets.

The primary subject of these comments are the issues relating to entry of non-U.S.-licensed satellite systems into the U.S. market for mobile satellite services ("MSS"), including global mobile personal communications services ("GMPCS"). The MSS/GMPCS market presents special issues in this proceeding, primarily because of the uniquely global nature of GMPCS services. As the Commission recognizes in the DISCO-II NPRM,^{1/} the structure of the MSS market necessitates a modified, global version of the basic effective competitive opportunities test for satellite services (the "ECO-Sat" test).^{2/}

Section II of these comments describes the structure of the global MSS market, in terms of the major participants in the market. Currently, the only provider of global MSS is the International Maritime Satellite Organization ("Inmarsat"), which is considering plans for restructuring and privatization. In the next few years, a variety of new MSS systems, including as many as four global "Big LEO" systems -- Iridium, Odyssey, Globalstar, and I-CO Global -- are expected to enter the market and to provide GMPCS. In addition, there are an increasing number of satellite systems providing regional MSS.

Section III discusses the important role of the World Trade Organization ("WTO") Group on Basic Telecommunications ("GBT") in promoting global market access in the MSS/GMPCS market. Motorola and Iridium support an agreement in the WTO negotiations, which could obviate the need for implementation of a new U.S. market entry standard for non-U.S.-licensed satellite systems.

^{1/} Amendment of the Commission's Regulatory Policies to Allow Non-U.S.-Licensed Space Stations to Provide Domestic and International Satellite Service in the United States, IB Docket No. 96-111, FCC 96-210 (May 14, 1996) (Notice of Proposed Rulemaking) ("DISCO-II NPRM").

^{2/} Id. ¶¶ 45-47.

Section IV addresses the appropriate market entry test for non-U.S.-licensed MSS/GMPCS systems. In the DISCO-II NPRM, the Commission proposes "to deal with MSS market access issues through simultaneous evaluation of effective competitive opportunities on a global or regional basis."^{3/} Motorola and Iridium fully support this proposed "global ECO-Sat" test for MSS/GMPCS. Section IV covers: (1) the authority for the ECO-Sat test under Section 308(c) of the Communications Act of 1934; (2) the treatment of the MSS market as a distinct market; (3) the global nature of the GMPCS market, in terms of both usage patterns and economic theory; (4) the propriety of a "critical mass" test for MSS/GMPCS market entry; (5) the form of such a critical mass test; and (6) certain other considerations raised by the Commission in the DISCO-II NPRM.

In Section IV, Motorola and Iridium propose a two-part critical mass test for MSS/GMPCS market entry:

- 1. There is a rebuttable presumption of critical mass with respect to a non-U.S.-licensed MSS system if there are effective competitive opportunities for U.S.-licensed MSS systems in the home markets of the direct and indirect owners of the foreign system, including 80 percent of the home market countries of such direct and indirect owners, and 80 percent of the population of the home market countries of such direct and indirect owners.**
- 2. The basic presumption regarding critical mass may be rebutted, based upon consideration of all relevant factors, including the importance of national markets in which there are not effective competitive opportunities for U.S.-licensed MSS systems.**

Finally, Section V addresses the standard for consideration of applications for U.S. MSS market entry by Inmarsat and its subsidiaries, affiliates, and successors. For reasons of both policy and regulatory consistency, the global ECO-Sat

^{3/} Id. ¶ 47.

test should apply to all such applications, except with respect to Inmarsat's statutorily-mandated international maritime services.

II. THE STRUCTURE OF THE MOBILE SATELLITE SERVICES MARKET

The market for mobile satellite services ("MSS") is a relatively young market that is experiencing a period of rapid development and change. The market first became important in the late 1970s, when Inmarsat was created by international agreement as a successor to the Marisat system. Since then, Inmarsat has expanded its initial maritime MSS offerings to include aeronautical and land mobile services, while remaining until recently the only MSS provider. In the next few years, however, market entry by a variety of new MSS systems, including as many as four global "Big LEO" systems, is expected. At the same time, Inmarsat is considering proposals for privatization and restructuring.

The MSS market presents special issues in this proceeding, both because of its ongoing development and, more importantly, because of the uniquely global nature of the service. As the Commission recognizes in the DISCO-II NPRM, the MSS market has unique characteristics that require a modified version of the basic effective competitive opportunities ("ECO-Sat") test for satellite services.⁴ This section provides basic background on the foreseeable participants in the global MSS market -- Inmarsat, the four proposed Big LEO systems, and regional geostationary MSS systems -- in order to inform the following discussion of the entry test for non-U.S.-licensed satellite systems participating in the MSS market.

⁴ Id. ¶¶ 45-47.

A. The International Maritime Satellite Organization

The International Maritime Satellite Organization ("Inmarsat")⁵ is the only existing provider of global MSS. Inmarsat is an intergovernmental organization that was created by a 1976 treaty:

to make provision for the space segment necessary for improving maritime communications, thereby assisting in improving distress and safety of life at sea communications, efficiency and management of ships, maritime public correspondence services and radiodetermination capabilities.⁶

The United States played a major role in the development of Inmarsat and joined the organization in order to guarantee a long-term alternative to unreliable, low quality maritime communications over high-frequency radio from coastal stations.⁷

Inmarsat provides service over satellites in geostationary earth orbit ("GSO") in the four ocean regions. Recently, Inmarsat launched and placed into the service the first of its third-generation Inmarsat-3 satellites.⁸ Inmarsat provides its services in the 1525-1559 and 1626.5-1660.5 MHz frequency bands, which the International Telecommunication Union ("ITU") has designated for provision of aeronautical, land, and maritime MSS.

⁵ A change of the full name of Inmarsat to the International Mobile Satellite Organization has not yet entered into force. See Report of the Tenth (Extraordinary) Session of the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/10/18, at A24-A25 (Dec. 13, 1994).

⁶ Convention on the International Maritime Satellite Organization (INMARSAT), Sept. 3, 1976, art. 3(1), 31 U.S.T. 1, 4 ("Inmarsat Convention"); see also International Maritime Satellite Communications Act, Pub. L. No. 95-564, § 1, 92 Stat. 2392 (1978).

⁷ S. Rep. No. 1036, 95th Cong., 2d Sess. 2-5 (1978), reprinted in 1978 U.S.C.C.A.N. 5272, 5273-76.

⁸ See Inmarsat-3 -- The New Generation, in Inmarsat Home Page, <http://www.inmarsat.org/inmarsat/system/i-3.htm>.

Inmarsat is governed by an Assembly of the representatives of the national governments that are Parties to the Inmarsat Convention, and by a Council of the representatives of the Signatories to the Inmarsat Operating Agreement, who are the owners of the Inmarsat space segment.^{9/} All of the Parties to the Inmarsat Convention are national governments and 73 of the 78 Signatories of the Inmarsat Operating Agreement are national government regulators and/or government-owned providers of telecommunications services.^{10/}

During the 1980s, the Inmarsat Assembly and Council approved amendments to the Inmarsat Convention and Operating Agreement to permit Inmarsat to provide aeronautical mobile satellite services ("AMSS") and land mobile satellite services ("LMSS").^{11/} Although the Aeronautical Amendments entered into force in 1989, the Land Mobile Amendments as of mid-1996 (seven and one half years after their enactment) have received only 29 of the 36 ratifications needed for entry into force.^{12/} Nevertheless, Inmarsat now provides substantial LMSS (approximately 39% of

^{9/} See Inmarsat Convention, arts. 10-15; Operating Agreement on the International Maritime Satellite Organization (INMARSAT), Sept. 3, 1976, 31 U.S.T. 135 ("Inmarsat Operating Agreement").

^{10/} See Inmarsat Member States, Signatories, Investment Shares and Council Membership, Inmarsat Doc. ASSEMBLY/11/1/ADD/1, Revised Annex IV (Jan. 23, 1996). The only Inmarsat Signatories that do not have any government ownership are those from Canada, Chile, New Zealand, the United Kingdom (where the government does hold a "golden share" permitting it to veto action of the Inmarsat Signatory, British Telecom), and the United States.

^{11/} Amendments to the Convention and Operating Agreement on the International Maritime Satellite Organization (INMARSAT), Oct. 16, 1985, reprinted in 27 I.L.M. 691 (1988) ("Aeronautical Amendments"); Amendments to the Convention and Operating Agreement on the International Maritime Satellite Organization (INMARSAT), Jan. 19, 1989 ("Land Mobile Amendments").

^{12/} Information provided at COMSAT Corporation Open Meeting on the Sixtieth Session of the Inmarsat Council (June 18, 1996); see also Land Mobile-Satellite Services, Status of Amendments to Convention and Operating Agreement, Inmarsat Doc. ASSEMBLY/11/10, Annex I (Jan. 25, 1996).

its nearly 53,000 authorized terminals as of August 31, 1995^{13/}), apparently on the basis of the opinion of Inmarsat's former General Counsel that such services are permissible even though the Land Mobile Amendments have not entered into force.^{14/}

In the last several years, Inmarsat has continued to move away from its original mission of providing maritime satellite services in two important ways. **First**, Inmarsat has established I-CO Global Communications, a commercial affiliate of Inmarsat that will provide global MSS to handheld terminals.^{15/} **Second**, Inmarsat is proceeding with plans for partial or complete privatization of the organization.^{16/} Because Inmarsat remains the only provider of global MSS, and because it enjoys significant privileges as an intergovernmental organization, each of the entities involved in these processes -- Inmarsat itself, I-CO Global, and any privatized successor of Inmarsat -- plays a very important role in the global MSS market.

B. The Big LEO Systems

One of the most important developments in the MSS market is the planned construction of several "Big LEO" satellite systems. The term "Big LEO" refers to satellite systems in low earth orbit ("LEO") or medium earth orbit ("MEO") that can provide global MSS, including services to handheld terminals that are often referred to

^{13/} See Report of the Inmarsat Council to the Eleventh Session of the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY 11/1/1, at 1 (Sept. 8, 1995).

^{14/} See Memorandum from W. von Noorden to Jack S. Hannon (Nov. 7, 1991), Attachment 1 to Letter from Neal T. Kilminster to Donna R. Searcy, FCC File No. I-T-C-91-139 (Feb. 18, 1992).

^{15/} See generally Application of COMSAT Corporation ("I-CO Construction Application"), Application of COMSAT Corporation for Authority to Participate in the Procurement of Facilities of the I-CO Global Communications Limited System ("I-CO Construction Proceeding"). FCC File No. 106-SAT-MISC-95 (May 1, 1995).

^{16/} See generally Report of the Eleventh Session of the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/11/23, at A19-A37 (Mar. 6, 1996) ("Eleventh Assembly Report").

as global mobile personal communications services ("GMPCS").^{17/} At present, there are plans for construction of four global Big LEO systems: Iridium, Odyssey, Globalstar, and I-CO Global.

1. The IRIDIUM® System

The first Big LEO GMPCS system expected to be in operation is the IRIDIUM® System, which is scheduled to have full service availability by the third quarter of 1998. The system will utilize 66 operational satellites in low earth orbit (and up to eleven in-orbit spares), the first of which will be launched by the end of 1996. The IRIDIUM® System received a space system license from the Commission in January 1995.^{18/}

An international consortium of investors and industrial partners -- led by Motorola, Inc., which developed the Big LEO concept -- is building the IRIDIUM® System. The total cost of the IRIDIUM® System through initial operation will be approximately \$4 billion, and total costs over the lifetime of the first-generation system will be significantly higher. Iridium will pay most of these funds to the numerous U.S. and non-U.S. contractors that are building the system, generating roughly 10,000 long term jobs in the United States, and many more abroad.

The IRIDIUM® System will provide global voice, data, and paging services from virtually anywhere in the world to virtually anywhere else in the world. The primary type of IRIDIUM terminal will be a dual-mode handset that automatically uses terrestrial wireless service where available and uses the Iridium service where

^{17/} The terms "MSS" and "GMPCS" are used in various manners separately and in combination in these comments, with GMPCS designating an important subdivision of MSS.

^{18/} Application of Motorola Satellite Communications, Inc. for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the 1616-1626.5 MHz Band, 10 FCC Rcd 2268 (1995), recon. denied (June 27, 1996).

terrestrial wireless is unavailable or incompatible with the user's handset. In addition, Iridium will offer alphanumeric pagers; aircraft- and automobile-based mobile units; portable, redeployable solar-powered telephone booths; and fixed multiple user units ("MXUs") that can be linked to the telephones of an entire village or similar group of users.

Many of the most important markets for IRIDIUM services, as well as for the services of the other Big LEO systems, will be developing countries that have limited telecommunications infrastructure. In these countries, GMPCS will be useful both to international business travelers ("roamers"), because local wireline telephones are likely to be unavailable or of poor quality, and to local populations ("homers"), as a complement to terrestrial wireless telecommunication infrastructure.

The IRIDIUM® System will be linked to the public-switched telephone network ("PSTN") and to terrestrial wireless systems through gateway earth stations, which will initially be located in 10-12 countries and ultimately in approximately 24 countries. An IRIDIUM call to a PSTN or terrestrial wireless user in a non-gateway country will be transmitted internationally over the PSTN from a gateway country. In the U.S., communications over the IRIDIUM® System will use frequencies in the L-band at 1621.35-1626.5 MHz for both earth-to-space ("uplink") transmissions and space-to-earth ("downlink") transmissions.

2. Odyssey And Globalstar

The Commission has licensed two other U.S.-based Big LEO GMPCS systems: Globalstar¹⁹ and Odyssey.²⁰ The Globalstar system would use

¹⁹ Application of Lorel/Qualcomm Partnership, L.P. For Authority to Construct, Launch, and Operate Globalstar, a Low Earth Orbit Satellite System to Provide Mobile Satellite Services in the 1610-1626.5 MHz/2483.5-2500 MHz Bands, 10 FCC Rcd 2333 (1995).

48 operational LEO satellites and is being constructed by a group of investors led by Loral Corporation. The Odyssey system would use 12 operational MEO satellites and is planned to be constructed by a group of investors led by TRW Inc. The space segment and ground segment architectures of Globalstar and Odyssey differ significantly from that of the IRIDIUM® System; however, Globalstar and Odyssey would offer services fairly similar to those of the IRIDIUM® System. Globalstar and Odyssey plan to share spectrum in the L-band at 1610-1621.35 MHz for uplink transmissions and in the 2483.5-2500 MHz band for downlink transmissions.

3. I-CO Global Communications

The only non-U.S.-licensed Big LEO GMPCS system that is currently expected to compete on a global basis with Iridium, Odyssey and Globalstar is the system being built by I-CO Global Communications. The I-CO Global system will use 10 operational MEO satellites and two in-orbit spares. Like Globalstar and Odyssey, I-CO Global will provide services fairly similar to those of the IRIDIUM® System. Unlike Iridium, Globalstar and Odyssey, however, I-CO Global proposes to use spectrum in the 2 GHz band.

I-CO Global is owned almost exclusively by Inmarsat and its Signatories, with Inmarsat itself holding approximately a 15 percent share in the company. Each of the 78 Inmarsat Signatories has an indirect interest in I-CO through this Inmarsat investment. In addition, more than 40 Signatories have direct investments in I-CO.^{21/}

^{20/} (... continued)

^{20/} Application of TRW Inc. for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the 1610-1626.5 MHz/2483.5-2500 MHz Band, 10 FCC Rcd 2263 (1995).

^{21/} See I-CO Construction Application, at 17-18 (Inmarsat has guaranteed voting rights of 15 percent and owns 1.5 million Ordinary Shares and 700,000 B Shares,

(continued ...)

Furthermore, Inmarsat in its official proceedings has indicated "the possibility of convergence between I-CO and Inmarsat in the long term."^{22/} The substantial overlap of ownership between Inmarsat and I-CO Global and the prospects for long-term consolidation between the two entities are key structural considerations in the global MSS/GMPCS market. These considerations will be important both in the application of the proposed global ECO-Sat test and as independent public interest factors in connection with the Commission's evaluation of applications for service in the United States. The considerations are in two major areas.

First, and most important, is market access. As noted above, 73 of the 78 Signatories of Inmarsat, and hence nearly all of the investors in I-CO Global, are national telecommunications regulators and/or government-owned service providers. These government-owned investors in I-CO Global frequently have significant authority over access of Big LEO GMPCS systems to their national markets. As discussed in section III below, the United States is seeking through the WTO GBT to promote access for U.S. telecommunications service providers to the markets of all WTO members. Motorola and Iridium strongly support a successful WTO treaty that provides market access in a critical mass of countries. However, if such an agreement is not possible, then it is critical in this proceeding that the Commission adopt a

^{21/} (... continued)

which are convertible into ordinary shares, totaling 15.7% of initial shares). The only non-Inmarsat investor in I-CO Global is Hughes Electronics Corp., the builder of I-CO Global's satellites. See Response of COMSAT Corporation to Petitions to Deny and Comments, at Exh. 5, I-CO Construction Proceeding (July 28, 1995).

^{22/} Interim Report of the Intersessional Working Group (IWG) to the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/11/3, at 5 (Jan. 15, 1996); see also Report of the Tenth (Extraordinary) Session of the Inmarsat Assembly, Inmarsat Doc. ASSEMBLY/10/18, at A31 (Dec. 13, 1994) (requesting a report "relating to the future structure of Inmarsat, taking into account the value of long term linkages with the Inmarsat-P Affiliate [I-CO Global], and the possibility of convergence between the two Organizations in the long term").

pro-competitive standard for access to the U.S. market that encourages other countries to open their markets to MSS/GMPCS service providers.

Second, I-CO Global has very significant potential advantages over Big LEO GMPCS competitors with respect to access to spectrum. For example, the European Conference of Postal and Telecommunications Administrations ("CEPT"), recently designated, on a preliminary basis, 60 MHz in the 2 GHz band (30 MHz uplink and 30 MHz downlink) for MSS.^{23/} As much as 30 MHz of this spectrum has been proposed for use by I-CO Global. Furthermore, as noted above, Inmarsat itself has access to 68 MHz of spectrum, which it uses for roughly 50,000 subscribers. These amounts of spectrum stand in sharp contrast to Iridium's initial access in the United States to only 5.15 MHz of spectrum for an anticipated 2,000,000 subscribers (and the 27 MHz of spectrum that Globalstar and Odyssey share). If I-CO Global and Inmarsat have significantly more spectrum than U.S.-licensed Big LEO GMPCS competitors for provision of GMPCS, it will be very difficult for the U.S. companies to compete effectively. In the GMPCS market, lack of spectrum can be the equivalent of lack of market access.

C. Regional Geostationary Systems

Although Inmarsat and the Big LEO GMPCS systems are likely to be the major participants in the developing MSS market, the market will also likely include several regional MSS systems using GSO satellites. In North America, American Mobile Satellite Corporation ("AMSC") is now providing MSS to mobile (but not handheld) terminals over a single GSO satellite.^{24/} Other regional GSO MSS systems

^{23/} Minutes of the First Meeting of ERC/PT 22 (S-PCS), CEPT Doc. CEPT/ERC/PT22(96) (May 6-7, 1996).

^{24/} See American Mobile Satellite Corp., 7 FCC Rcd 942 (1992) (authorizing AMSC

(continued ...)

include the MSAT 1 satellite, operated by TMI Communications of Canada^{26/}; the Mexican Solidaridad system; and several other proposed regional GSO systems.

III. THE WORLD TRADE ORGANIZATION IS WORKING TO PROMOTE GLOBAL MARKET ACCESS FOR SATELLITE SERVICES

Concurrently with this proceeding, the WTO GBT is working to promote global market access for telecommunications service providers in all sectors, including the satellite sector. Motorola and Iridium strongly support an agreement in the GBT, provided a "critical mass" of countries open their markets to GMPCS.^{28/}

The procedures in the GBT permit any member of the WTO to make a market opening offer containing specific market opening commitments for each telecommunications sector ^{27/} If there is a final agreement in the GBT, the offers made will be effective on January 1, 1998.^{28/} However, a fundamental difficulty with agreement in the negotiations is that any market opening commitments in an offer must be accorded to all WTO members. This means that "free riders" who make no market opening commitments at all in the GBT will enjoy the benefits of market opening offers

^{24/} (... continued)

to provide interim services via leased Inmarsat capacity pending launch of its satellite); see also AMSC 1, in The Satellite's Encyclopedia Online, http://www.TELE-satellit.com/tse/online/sat_amsat_1.html.

^{25/} See MSAT 1, in The Satellite's Encyclopedia Online, http://www.TELE-satellit.com/tse/online/sat_msat_1.html

^{26/} The concept of critical mass is discussed in more detail in sections IV.C - IV.E below.

^{27/} See generally General Agreement on Trade in Services ("GATS Agreement"), arts. XVI-XVIII & Annex on Negotiations on Basic Telecommunications, WTO Doc. MTN/FA II-A1B (Dec. 15, 1993).

^{28/} See Fourth Protocol to the General Agreement on Trade in Services, WTO Doc. (Apr. 30, 1996).

by other countries.^{29/} Because of this problem, U.S. negotiators have followed the principle that a United States commitment to open its market for any telecommunications services will be ineffective in achieving global market access unless a critical mass of other countries have made similar commitments.

The initial deadline for GBT offers was April 30, 1996.^{30/} However, as of that date, precious few countries had made broad market opening offers for MSS effective January 1, 1998. Only the United States, most (but not all) of the European Union countries, Japan, Australia, New Zealand and Iceland had agreed to provide the necessary market access. These countries do not remotely constitute a critical mass in the satellite services market. The GBT has therefore properly extended the negotiating period to February 15, 1997 to allow other participants to improve their offers.^{31/}

Motorola and Iridium are optimistic that there will be enough improved offers to form a critical mass of WTO members by February 15, 1997, which will form a basis for a GBT agreement. Such a broad agreement would provide important market-opening benefits in the MSS/GMPCS market (as well as in a variety of other telecommunications sectors) for those countries that choose to open their national markets to these services. The agreement would also achieve the essential goal of market access in a critical mass of countries without dependence on implementation of a new U.S. entry standard for non-U.S.-licensed satellite systems.

However, if there is no GBT agreement, the standard adopted in the current proceeding will be essential to encourage other governments to provide nondiscriminatory market access for GMPCS.

^{29/} This is a consequence of the "most-favored nation" treatment principle incorporated in the GATS Agreement. See GATS Agreement, art. II(1).

^{30/} See GATS Agreement, Annex on Negotiations on Basic Telecommunications.

^{31/} See Decision on Commitments in Basic Telecommunications, WTO Doc. (Apr. 30, 1996).

IV. THE COMMISSION SHOULD APPLY A GLOBAL ECO-SAT MARKET ENTRY TEST TO NON-U.S.-LICENSED MSS PROVIDERS, TO TAKE INTO ACCOUNT THE GLOBAL NATURE OF THE MSS MARKET

In the DISCO-II NPRM, the Commission proposes

to deal with MSS market access issues through simultaneous evaluation of effective competitive opportunities for MSS providers on a global or regional basis. Under such an approach, we would require that some "critical mass" of foreign markets be open to U.S. satellite operators before a non-U.S. MSS system could provide any service in the United States.^{32/}

Motorola and Iridium fully support this proposed "global ECO-Sat" test, as elaborated below. Indeed, the structure of the global MSS market effectively requires an approach like the one taken by the Commission.

This section addresses: (1) the statutory authority for the Commission's regulation of market entry by non-U.S.-licensed satellite systems; (2) the scope of the market entry test applicable to the MSS market in terms of which services should be regulated; (3) the uniquely global structure of the MSS market; (4) the relationship of that global market structure to the global ECO-Sat test for MSS market entry proposed by the Commission; (5) the "critical mass" component of the Commission's test; and (6) a number of additional questions raised in the DISCO-II NPRM that are relevant to MSS market entry.

^{32/} DISCO-II NPRM ¶ 47 (original emphasis).

A. Section 308(c) Of The Communications Act Of 1934 Authorizes The Commission's Regulation Of Market Entry By Non-U.S.-Licensed Satellite Systems

The Commission has correctly asserted Section 308(c) of the Communications Act as statutory authority for the DISCO II rulemaking.^{33/} Section 308(c) states:

The Commission in granting any license for a station intended or used for commercial communication between the United States or any Territory or possession, continental or insular, subject to the jurisdiction of the United States, and any foreign country, may impose any terms, conditions, or restrictions authorized to be imposed with respect to submarine-cable licenses by section 2 of an Act entitled "An Act relating to the landing and the operation of submarine cables in the United States," approved May 24, 1921.^{34/}

The legislation referred to at the end of this provision, the Submarine Cable Landing License Act ("SCLA"), in turn states that:

[t]he President may withhold or revoke such license when he shall be satisfied after due notice and hearing that such action will assist in securing rights for the landing or operation of cables in foreign countries, or in maintaining the rights or interests of the United States or of its citizens in foreign countries, or will promote the security of the United States or may grant such license upon such terms as shall be necessary to assure just and reasonable rates and service in the operation and use of cables so licensed.^{35/}

^{33/} Id. ¶ 7 (citing 47 U.S.C. § 308(c) and the Submarine Cable Landing Act, Pub. L. No. 67-8, 42 Stat. 8 (1921)).

^{34/} 47 U.S.C. § 308(c).

^{35/} 47 U.S.C. § 35 (emphasis added).